Original article

Knowledge, attitude and issues in practicing kangaroo mother care at home after discharge from a kangaroo mother care ward of a tertiary care hospital in central Lahore

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ABSTRACT

Background: Kangaroo mother care (KMC) is well known intervention in preterm care. Mothers gets training from health professionals to provide skin to skin care, breast feeding which helps in infections prevention and early discharge. It is required to inquire the mothers experience during home environment to promote this technique after discharge from hospital. This study focused on gaining the knowledge, attitude of unsupervised mothers practicing KMC at home and determine the most common issues faced by them.

Subjects and methods: A cross-sectional study, conducted at KMC ward of the Department of Pediatrics, Unit-1, Services Institute of Medical Sciences (SIMS), Lahore from March 2020 to April 2021 after ethical approval. Hospitalized mothers of stable pre-term infants were taught KMC techniques by trained health care provider. After two weeks of discharge from hospital mothers were interviewed according to structured questionnaire by the trained doctor about their KMC knowledge, experience and issues faced at home.

Results: Out of 156 mothers 145 (92.9%) conducted KMC at home and 93 (59.6%) performed intermittent KMC during nighttime (p=0.001). 152 (97.4%) mothers felt good, 133 (85.3%) were comfortable and 122 (78.2%) deemed the process safe for their babies. 82 (52.6%) felt ease with provided kits (p=0.032).120 (76.9%) husbands felt KMC was essential for their babies. 102 (65.4%) mothers were allowed by their husbands to do KMC at home (p=0.000) and 68 (43.6%) fathers sometimes performed KMC themselves (p=0.001). Family and friends were also supportive in 104 (66.7%) cases while 112 (71.8%) mothers felt the positive attitude of the community (p=0.000). 127 (81.4%) mothers were willing to recommend KMC to new mothers (p=0.019).

Conclusion: Most of the mothers performed intermittent KMC at home. They were assisted by husband and family members to carryout KMC at home. They are willing to recommend it to new mothers.

Keywords: Kangaroo Mother Care, Perception, Attitude, Barrier

INTRODUCTION

Though internationally, neonatal mortality has declined from 51% since 1990, but still exasperating in South Asia and Sub-Saharan African regions.[1] Neonatal infection, birth asphyxia and prematurity are major preventable causes of neonatal demise worldwide.[2] Pakistan occupies 3rd place in the world with high neonatal mortality. It remained unchanged at 55 deaths per 1,000 live births for nearly a decade, as reported by 2006-07 and 2012-13 Pakistan Demographic and Health Survey. However, it steadily declined from 42 to 40.4 deaths per 1,000 live births from 2018 – 2020.[3,4] Low birth weight and complications of pre-term births are leading causes of neonatal deaths in Pakistan.[5,6]

Kangaroo Mother Care (KMC) is a well-established technique to support pre-term and low birth weight babies.[7] It constitutes prolonged maternal-infant skin to skin contact, early initiation of exclusive breast feeding and close monitoring of neonatal illnesses, resulting in early hospital discharge. It is an economical, instantaneous and effective exercise in saving the lives of premature and low birth weight babies, especially in resource constraint countries.[7,8] KMC works as an alternative strategy to conventional incubator care to protect preterm infant from hypothermia, sepsis and promote breast feeding and growth.[9] KMC is termed as continuous, when mother-infant skin to skin contact is more than 20 hours and intermittent, when it is carried out for few hours a day.[10] KMC is time consuming and its implementation requires proper counselling from health workers, and societal support for mothers. Thus, for KMC implementation at home, one must address the

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obstacles faced by the mothers and reassure support by family and the community.[11]

Yue and coworkers studied KMC promotors and inhibitors at parental, community and health provider level.[12] They determined parental anxiety and guilt as obstacles; while family support as a booster for KMC practice. Similarly, the attitude of the health care provider, and adequate infrastructure supply were significant factors for KMC promotion in hospitalized mothers[12]. Pratomo and colleagues revealed that the hospital staff's attitude, hospital managerial support, family and community help were major contributors.[10]

In Pakistan, it is an emerging practice in preterm care. Hence merits maximum information about KMC practicing mothers' issues especially in home environment where due to insufficient support mother may decline to continue the practice. It is time consuming and bothering for mother as well. It was hypothesized that mothers may leave the practice once they got discharged from hospital due to lack of family support. Hence this study was designed to gaining the knowledge, attitude of unsupervised mothers practicing KMC at home and determine the most common issues faced by them.

SUBJECTS AND METHODS

It was a cross sectional observational study, conducted in the KMC ward of the Department of Pediatrics, Unit-1, Services Hospital, Lahore; from March 2020 to April 2021. A total of 156 mothers were included in the study after calculating sample size from "Open Epi" software. The ethical approval of study was obtained from SIMS Review Board. The volunteer mothers of vitally stable low birth weight (less than 2.5 kg) and pre-term neonates (birth before 37 week gestation) of the KMC ward were included in the study. The mothers of vitally unstable preterm / low birth weight babies, neonate with congenital malformations, unwilling for KMC study and those who did not turn up or respond on telephonic connection for follow-up were excluded from the study.

Enrolled mothers were kept in the KMC ward along with their neonates. These mothers were given KMC kits that contained: two binders, to hold the baby with the mother's skin; one gown, for the mother to wear over the binder; two caps, socks, and front open vests for her baby; one spoon, a feeding cup and a transparent jar for milk storage; one mercury thermometer; and a mirror to observe the baby's breathing. They were educated with facts of KMC listed in Questionnaire 1 by the KMC-trained doctor. While admitted in the KMC ward, they were guided on technique (baby position, breast feeding and umbilical cord care), sufficient time and when to withdraw KMC by the trained KMC doctor / nursing staff. During hospital stay, available husbands and family members (e.g. mother/ mother in law) were counselled for importance of KMC in young babies. As a result, they were motivated to help the mother to do KMC at home once discharged. Continuous KMC was defined when duration was more than 18 hours. Intermittent was defined when duration was less than 18 hours.

After two weeks of discharge, these mothers were called personally or telephonically for the follow up. They were inquired for their knowledge (which was provided by a trained person during hospital stay on questionnaire 1). They were assessed on Questionnaires 2 and 3 for their attitude, and the impediments faced by them doing KMC at home, respectively. The mother felt "good" when she did not feel odd keeping the baby in KMC position along her skin and "comfortable" when she enjoys while keeping the baby in said position. She deemed it "safe" when she felt that baby was secured in the KMC binder. The responses were recorded on proforma by the same KMC trained doctor who translated questions in Urdu language before marking. The data was analyzed using SPSS version 22 and was presented as actual numbers (N), frequencies, percentages, means and standard deviations for quantitative variables. Chi-square test was employed on categorical data and p-value less than 0.05 was considered significant for their said response.

RESULTS

Total of 156 mothers aged 19-34 years, were included in study during one-year period. Sixty eight (43.6%) were primigravida, and 119 (76.3%) had institutional deliveries. Vitally stable infants from birth to 32 days of age (mean age 4.41$\pm$4.43 days) were kept with mothers for KMC in KMC ward. Gestational age of neonates ranged from 28-36 week. 152 (75.6%) were of 32wwks of gestation and above. Mean gestational age was 33.77+ 1.85 weeks of gestation. Neonatal birth weight ranged from 800 gram to 2900 gram with mean weight of 1.82+388 grams. Twenty three (14.7%) mothers were unable to write or read and 26 (16.7%) were working ladies. Eighty mothers (51.3%) practiced continuous KMC during hospital stay whereas, 117 ladies (75%) performed intermittent KMC at home. On follow up after two weeks of discharge mothers were asked about KMC knowledge either physically or telephonically by the same doctor on questionnaire 1. Their responses depicting mothers' knowledge about KMC are described

in Table 1. 127 (81.4%) were unaware of KMC procedure before delivery of a baby, however on follow-up, 154 (98.7%) mothers were knowledgeable of KMC is emergent way of care of small babies. 143 (91.7%) mothers were familiar with KMC position of the baby, 64 (41%) mothers knew that KMC can be given in any posture, 110 (70.5%) mother were aware of hat as an essential component in baby's clothing, 118 (75.6%) had information about sufficient duration and 101(64.7%) time to discontinue KMC.

Feedback regarding attitude towards KMC practice (Table 2) indicated that152 (97.4%) mothers felt good, 133 (85.3%) comfortable and 122 (78.2%). found the process safe for the baby. 148 (94.9%) respondents thought that mother-baby bonding was enhanced, and 86 (55.1%) mothers did not find KMC tiring for them.82 (52.6%) felt relaxed in the provided kits, (p=0.032). 120 (76.9%) answered that their husbands felt KMC essential for their baby (p=0.005).

Issues faced by the mothers while performing KMC at home are described in Table-3. 145 (92.9%) conducted KMC at home and 93 (59.6%) performed KMC during the night for some time (p=0.001). 105 (67.3%) did not feel babies' umbilical cord as a hurdle during KMC, (p=0.030). 102 (65.4%) mothers were allowed by their husbands to do KMC at home (p=0.000) and 68 (43.6%) respondents told that their husbands performed KMC themselves for some time (p=0.001). 93 mothers (59.6%) performed intermittent KMC during night (p=0.001). Family and friends of 104

Table1: Questionnaire for assessing the knowledge of mother about KMC.

Sr.#	Question	Response n= 156 (%)			
		No	Yes	Not sure	p-value
1.	Did you know KMC prior to delivery?	127 (81.4%)	10 (6.4%)	19 (12.2%)	0.158
2.	Do you know what is KMC?	0	154 (98.7%)	2 (1.3%)	0.411
3.	Do you know which babies need KMC?	7 (4.5%)	142 (91%)	7 (4.5%)	0.291
4.	Do you know if KMC can be practiced at home?	3 (1.9%)	152 (97.4%)	1 (0.6%)	0.504
5.	Can husband provide KMC to baby?	14 (9%)	114 (73.1%)	28(17.9%)	0.172
6.	Do you know the normal position of KMC?	6 (3.8%)	143 (91.7%)	7 (4.5%)	0.873
7.	Can mother provide KMC in any posture?	51 (32.7%)	64 (41%)	41 (26.3%)	0.152
8.	Can mother provide KMC while sleeping/resting?	42 (26.9%)	70 (44.9%)	44 (28.2%)	0.100
9.	Do you know baby needs hat in baby clothing during KMC?	20 (12.8%)	110 (70.5%)	26 (16.7%)	0.808
10.	Do you know 18 hours of KMC is sufficient duration per day?	6 (3.8%)	118 (75.6%)	32 (20.5%)	0.350
11.	Do you know baby will gain expected weight every day?	3 (1.9%)	101 (64.7%)	52 (33.3%)	**0.007**
12.	Do you know the specific time to discontinue KMC?	12 (7.7%)	101 (64.7%)	43 (26.7%)	0.763

Table 2: Questionnaire for assessing the attitude towards KMC practice

Sr.#	Question	Response			
		No	Yes	Not sure	p-value
1.	Did you feel good while giving KMC to the baby?	1 (0.6%)	152 (97.4%)	3 (1.9%)	0.135
2.	Was it comfortable for you to give KMC?	3 (1.9%)	133 (85.3%)	20 (12.8%)	0.819
3.	Did you feel that the baby is safe during KMC?	5 (3.2%)	122 (78.2%)	29 (18.6%)	0.733
4.	Did you feel ease in clothes provided for KMC?	18 (11.5%)	82 (52.6%)	55 (35.3%)	**0.032**
5.	Was giving KMC alone tiring for you?	86 (55.1%)	66 (42.3%)	4 (2.6%)	0.852
6.	Were you more comfortable in handling baby after KMC?	4 (2.6%)	115 (73.7%)	37 (23.7%)	0.617
7.	Do you think KMC increases mother baby bonding?	4 (2.6%)	148 (94.9%)	4 (2.6%)	0.245
8.	Did you feel breastfeeding is practiced better in KMC position?	24 (15.4%)	62 (39.7%)	70 (44.9%)	0.582
9.	Were you able to perceive the baby's heart beats and breathing?	6 (3.8%)	100 (64.1%)	50 (32.1%)	0.068
10.	Did your husband feel KMC essential for your baby?	6 (3.8%)	120 (76.9%)	30 (19.2%)	**0.005**
11.	Did you family / friends think that KMC required for the baby?	9 (5.8%)	110 (70.5%)	37 (23.7%)	0.279
12.	Did someone followed you in giving KMC to one's baby?	40 (25.6%)	29 (18.6%)	87 (55.8%)	0.164

Table 3: Questionnaire for assessing the issues regarding KMC practice at home.

Sr.#	Question	Response			
		No	Yes	Some time	p-value
1.	Do you think cord is an issue in practicing KMC?	105 (67.3%)	36 (23.1%)	15 (9.6%)	**0.030**
2.	Did you practice KMC at home?	6 (3.8%)	145 (92.9%)	5 (3.2%)	0.368
3.	Did you practice KMC at night?	34 (21.8%)	29 (18.6%)	93 (59.6%)	**0.001**
4.	Did your husband allow KMC at home?	7 (4.5%)	102 (65.4%)	47 (30.1%)	**0.000**
5.	Did your husband help in practicing KMC at home?	64 (41%)	24 (15.4%)	68 (43.6%)	**0.001**
6.	Was there family / friends support at home?	7 (4.5%)	104 (66.7%)	45 (28.8%)	0.286
7.	Did you practice KMC outside your home?	135 (86.5%)	6 (3.8%)	15 (9.6%)	0.809
8.	Do you recommend KMC to other mothers?	4 (2.6%)	127 (81.4%)	25 (16%)	**0.019**
9.	Was attitude of community helpful in practicing KMC?	7 (4.5%)	112 (71.8%)	37 (23.7%)	**0.000**
10.	Was baby fed more easily in KMC position	19 (12.2%)	62 (39.7%)	75 (48.1%)	0.417
11.	Were you able to manage household work with KMC?	33 (21.2%)	48 (30.8%)	75 (48.1%)	0.832

(66.7%) mothers were helpful to mother while performing KMC at home as 48 (30.8%) were able to do household work while performing KMC. while 112 (71.8%) mothers were not bothered by any person visiting their home as well (p=0.000). 127 (81.4%) mothers were willing to recommend KMC to new mothers (p=0.019).

DISCUSSION

KMC has arisen as a vital therapeutic technique to reduce neonatal mortality due to low birth weight, premature birth and associated deaths. However, its time consuming procedure and the mother practicing KMC needs support of health professionals, family members as well as community to get positive result. It is necessary to inform mother during antenatal period about procedure so that if premature delivery occur, mother is prepared to perform KMC to small baby. In our study 81% recruited mothers did not have knowledge about this procedure before delivery. This is in concordance with other studies done in India and Malawi, which describe that 95.4%, 84% mothers had no knowledge about KMC prior to delivery of a baby respectively.[13-15] Similar results were found in a study conducted in Ghana.[16] Only 11.4% mothers had knowledge about KMC prior to delivery, nevertheless, 95.5% were convinced to practice it once taught by the nursing staff. Later 99.5% continued KMC after discharge and 98.0% were willing to endorse KMC to other mothers as well. This depicts that awareness is necessary during antenatal period specially those women who are going to have pre-term birth. The health care provider is playing a significant role in the encouragement of mothers practicing KMC during post-natal period. So 92.9% mothers of our study performed KMC at home willingly without health staff supervision. About 70% mothers knew that baby needs hat for temperature maintenance during KMC. Hat for neonate is usually missing item in their clothing, same results were shown by Salim N, when 57.4 - 93.1% mothers provided hat to their babies in two different hospitals.[17]

KMC clothing is a special band which is worn by the mother to hold the preterm baby without the fear of falling [18]. Different studies revealed diverse results of its acceptance by the mothers. Our study showed that 52.6% mothers were comfortable with kit. This is probably due to the fact it is in contrast to our usual female dress code. Thapa K showed 85% mothers chose new band instead of their customary clothing.[19] On the contrary, studies done in Bangladesh, Tanzania and Nepal depicted only 13.2% usage of KMC wrap by mothers and rest used their traditional cloths for securing the baby.[17] In this study, 73.7% mothers were confident to handle preterm infant which is in concordance with Purbasary and colleague's (2017) study describing significant improvement in maternal confidence to handle a low birth baby when compared with control group.[20] The 94.9% mothers in our study felt improved bonding with their infants. This is in accordance to Canadian study that depicted mother satisfaction and preference to adopt KMC.[21]

Acceptance by the husband and community support in this study were also statistically significant (p=0.000) which is comparable with previous studies reporting almost 96% mothers, 82% fathers and 84% family members were in favor of safety and effectiveness of KMC.[16,22] This study finds 72.8% mothers reported KMC as safe for pre-term babies as they did not had fear of falling off the baby from the binder which is comparable to a previous report where 59.5% mothers felt more confident to handle the pre-term baby and almost all were in favor to recommend KMC to new mothers. Only 9% of the father's assistance was in contrast to current study.[23] Present study also observed that 39.7% mothers felt that baby was fed more easily, similar to the previously reported experience that KMC position was an impedance during infant feeding.[24] On the other hand, when KMC mothers were compared with non KMC mothers group, it revealed twice increase in breast feeding practices with intermittent KMC; after discharge from hospital.[25] In Our study 48.1% women were able to manage some of the household work with KMC which is in contrary to study done by Kwesiga D, most of the mothers found KMC as barrier in executing household chores.[26]

The strength of current study was the efficacy of the counselling and training, provided to the ignorant mothers. After given the awareness, those mothers got motivated easily to do KMC at home. The mothers did not lose their knowledge and most of them performed intermittent KMC at home. They were well supported by their spouse and other family members. The study was mainly focused mostly on inborn cases. A fifteen days' post discharge follow-up interviews were exercised where mothers were found to retain good knowledge of KMC. However, study may be extended by following after one to two months to get a broader idea of their motivation and retention of knowledge.

CONCLUSION

Most of the mothers performed intermittent KMC at home. They were assisted by husband and family members to carryout KMC at home. They are willing to recommend it to new mothers.

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